WHAT IS CLAIMED IS:

1. An optoelectronic device, comprising:

an optical device system comprising an optical device substrate supporting one or more optical devices and a solderable metallization pattern having a spatial arrangement with respect to the one or more optical devices;

an optical lens system comprising one or more optical lenses and a device bonding surface supporting a solderable metallization pattern having a spatial arrangement with respect to the one or more optical lenses; and

a plurality of solder bumps disposed between the metallization patterns of the optical device system and the optical lens system;

wherein the plurality of solder bumps bond the optical device substrate to the device bonding surface with the one or more optical devices aligned with the one or more optical lenses.

2. The optoelectronic device of claim 1, wherein the one or more optical lenses are incorporated into the device bonding surface.

3. The optoelectronic device of claim 1, wherein the one or more optical lenses are recessed below the device bonding surface.

4. The optoelectronic device of claim 1, wherein the optical lens system comprises an optical substrate incorporating the one or more lenses and the device bonding surface defines one face of a spacer substrate.

5. The optoelectronic device of claim 4, wherein the optical substrate is bonded to the spacer substrate by a wafer bonding process.

6. The optoelectronic device of claim 4, wherein the optical substrate is bonded to the spacer substrate by a flip-chip solder bonding process.

7. The optoelectronic device of claim 4, wherein the thickness of the spacer substrate is selected based upon a representative focal distance between the one or more optical devices and the one or more optical lenses.

8. The optoelectronic device of claim 4, wherein the spacer substrate comprises one or more apertures through which light is transmitted between the one or more optical devices and the one or more optical lenses.

9. The optoelectronic device of claim 4, further comprising an integrated circuit formed on the spacer substrate and configured to drive the one or more optical devices.

10. The optoelectronic device of claim 4, further comprising an integrated circuit bonded to the spacer substrate by a flip-chip solder bonding process and configured to drive the one or more optical devices.

11. The optoelectronic device of claim 1, wherein a characteristic dimension of the plurality of solder bumps is selected based upon a representative focal distance between the one or more optical devices and the one or more optical lenses.

12. The optoelectronic device of claim 1, wherein the one or more optical devices comprises a vertical cavity surface emitting laser or a detector, or both.

13. An optoelectronic device, comprising:

an optical lens system comprising a lens substrate supporting one or more optical lenses, and a spacer substrate defining one or more apertures therethrough; and

an optical device system comprising a device substrate supporting one or more optical devices;

wherein the lens substrate is bonded to the spacer substrate and the spacer substrate is bonded to the device substrate with the one or more optical lenses, the one or more optical apertures and the one or more optical devices held together in registered alignment.

14. A method of aligning an optical device system and an optical lens system, comprising:

positioning an optical device system having one or more of optical devices and a solderable metallization pattern adjacent to an optical lens system having

one or more of optical lenses and a solderable metallization pattern with a plurality of solder bumps disposed thereon; and

heating the plurality of solder bumps to a temperature at or above the melting point of the solder bumps;

wherein, upon cooling, the plurality of solder bumps bond the optical device system to the optical lens system with the one or more optical devices aligned with the one or more optical lenses.

15. The method of claim 14, wherein the optical lens system comprises an optical substrate incorporating the one or more lenses and a spacer substrate supporting the metallization pattern of the optical lens system.

16. The method of claim 15, further comprising bonding the optical substrate to the spacer substrate.

17. The method of claim 15, further comprising selecting the thickness of the spacer substrate based upon a representative focal distance between the one or more optical devices and the one or more optical lenses.

18. The method of claim 15, further comprising forming in the spacer substrate one or more apertures through which light is transmitted between the one or more optical devices and the one or more optical lenses.

19. The method of claim 15, further comprising processing the spacer substrate to form an integrated circuit configured to drive the one or more optical devices.

20. The method of claim 14, further comprising bonding an integrated circuit configured to drive the one or more optical devices to the spacer substrate by a flip-chip solder bonding process.

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